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## Another new diaptomid (Crustacea, Copepoda) from the Brazilian Amazon

by

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### Abstract

A new species of the genus *Argyrodiaptomus* BREHM, 1933 is described as *Argyrodiaptomus robertsonae* spec. nov. It comes from the Curua Una reservoir (Brazilian affluent of Amazone, near Santarem). By comparison with the hitherto known and related species investigations revealed clear differences, especially in male antennule and P5, in female abdominal segments and size.

Keywords: Copepoda, Amazonian region, new species, Curua-Una reservoir, taxonomy.

### Resumo

Uma nova espécie para a ciência, o copepodo *Argyrodiaptomus robertsonae* está descrita da represa Curuá Una (Pará, Brasil). Comparada a *A. denticulatus* de Argentina, apresenta diferenças significativas tanto no macho (P5, A1) como na fêmea (segmentos abdominais).

### Résumé

Très voisine de *Argyrodiaptomus denticulatus*, une espèce nouvelle pour la science est décrite sous le nom de *A. robertsonae* nov. sp. Elle vit en Amazonie. La comparaison de cette espèce avec sa "parente" permet de mettre en évidence les différences nettes qui les séparent, notamment au niveau de l'antennule et de la P5 du mâle ainsi qu'à celui de l'abdomen de la femelle.



In a recent paper (DUSSART 1985), I described a species found in Brazil under the name *Argyrodiaptomus denticulatus* (PESTA, 1927). And I was writing some additions to the original descriptions "non tous fournis par les auteurs".

Some details are only explicable by some variability or malleability of this species, as it was impossible for me to compare the observed animals with true *A. denticulatus* coming from the region where the species was first investigated (Argentina).

I recently had the opportunity to get such specimens from Corrientes and then had proof that two "sister" species of the genus occur in South America: one in Argentina and the other in the Amazon. The first is the true *Argyrodiaptomus denticulatus*, already described by PESTA (1927) and BRIAN (1927) and the second is a new species.

*Argyrodiaptomus denticulatus* (PESTA, 1927)

(= ? *Diaptomus bergi*, BRIAN, 1925)

(= *Argyrodiaptomus denticulatus* auct.)

In 1925 BRIAN was the first person to observe this species, but named it "*Diaptomus bergi*" (BRIAN 1927). PESTA (1927) described roughly one female from the Parana delta near Tigre and BRIAN (1927) described a male caught in a man-made lake near Palermo (Buenos Aires). BRIAN's descriptions of this species are:

**Male:**

The last thoracic segment is almost symmetrical, acuminate, ended with one conical spine. First abdominal segment wider than long, with a slender spine at the posterior right angle. Other segments of abdomen symmetrical.

Antepenultimate joint of antennule with a distal process long, bended, over-reaching the penultimate one.

P5 right with an exopodite without any peculiarity, a little longer than wide; basipodite sub-quadrangular, with an hemispherical tubercule at the inner proximal angle; at the distal one, a bulge rounded and ciliated at the end (which represents the endopodite).

Exopodite 1 relatively small in size, subrectangular, wider than long; exopodite 2 large, longer than wide, subovale; terminal hook bended, relatively stout at base, with lines of spinules on concave side on a large part of length; lateral spine (aculeus) almost straight, relatively long but nevertheless hardly half the terminal hook; it is slightly striated and fixed not so far from the distal external angle of the joint.

P5 left with a basipodite subrectangular, longer than wide; at inner border occurs a stout sub-spherical tubercule, finely denticulated (spinulated ?); it corresponds to the same formation in P5 right; the inner border of this joint is covered with numerous small spines.

Endopodite subtriangular; it is about as long as the exopodite 1. Exopodite biarticulated, each joint with an internal pad covered with hairs. At the end, a digitiform process more or less conical; a spine (flagellum) emerges from it, as long as the totality of exopodite and twice the length of the process.

**Female:**

The last thoracic segment extends backward and has two spines at either side. Antennule with 25 joints. P5 with an endopodite composed by two joints, the articulation often difficult to observe.

Length: male, 1.45 - 1.84 mm; female, 1.65 - 2.2 mm.

From observations I made on other specimens recently caught in laguna Turbia (Isla el Cerrito), near Corrientes (Argentina), some details can be added (Plate 1).

**Male:**

Antennule with a distally attached spiniform process at joint 10. Joint 11 with a similar longer process which does not reach the small spine of joint 12. Joint 13 with a relatively short spiniform process which is slightly bifid at the end. The spine of joint 15 is relatively short.

The coxopodite of P5 has a conical process with a slender and relatively long spine at the apex. P5 right with an exopodite 1 which brings a conical then digitiform process, bent; exopodite 2 slightly spoon-like and with two knobs, one on the inner side, the other posterior. The distal corner of basipodite is subspherical and covered with spinules; it is most often hidden by endopodite. P5 left with an endopodite individualized, posterior side.

Length: about 1.8 mm.

**Female:**

Body rather long. Th4 and Th5 confluent, the confluence indicated by a few lateral spinules. Both sides of the last thoracic segment divided into bilobed wings, the dorsal lobes the smallest, each terminated by a sensory spine.

Genital segment twice as long as wide, slightly inflated proximally, particularly at the left side. Spines present at this level, the left one is curved towards the furca, the right one straight and stout. Second abdominal segment very short.

Antennule reaching the middle of the genital segment. P5 with endopodite much shorter than exopodite 1, biarticulated, with two spines and a row of apical hairs.

*Argyrodiaptomus robertsonae* nov. spec. \*)

Individuals from the Curua Una reservoir, Pará state, Brazil (02° 48'S, 54° 18'W) (Plate 2).

Holotype: a male dissected and mounted in Glycerine, deposited at INPA, Manaus (Brazil);

Allotype: a female mounted in Glycerine, undissected, also deposited at INPA;

Paratypes: some are in the author's collection, others at INPA (Manaus).

**Male:**

Body rather spindly. Th4 and Th5 seem fused. The last thoracic segment almost symmetrical, with small posterior directed wings, slightly obliquely on the right, acuminate, terminated by small spines. First abdominal segment inflated on the right; it does not seem to possess the usual sensory spine at the posterior angle.

Right antennule: joint 8 with a small and stout spine; joint 10 with a spiniform process fixed at the middle; on joint 11 this process is long, reaching joint 13, just so with a long process; joint 15 with a moderately long hook. Antepenultimate antennule joint relatively short, stout, with its external angle modified into a short hook not extending more than half the length of the penultimate joint.

Coxopodite of right P5 with a short sensory spine; basipodite with lateral inner side covered by numerous small spines. The extero-posterior side of the joint produced into a triangular lobe. The inner distal angle is expanded into a sort of tongue, slightly bifid at the end.

The lobe of exopodite 1 is conical and bifid at its end; the postero-external angle of this exopodite is expanded and thus this joint appears subtriangular rather than subrectangular in side view. Exopodite 2 externally inflated; the inner edge is straight; two chitinous knobs on posterior side. The terminal hook is inflated twice at the base and regularly bent; lateral spine (aculeus) is straight, short and inserted near the terminal hook's base.

Coxopodite of P5 left with a conical process bearing a relatively short sensory spine at the apex. Basipodite ovale, truncated, with the inner side covered by small spines; endopodite strong, biarticulated, ended by a short and stout subterminal spine and a row of hairs. Exopodite biarticulated, with the usual two pads covered with hairs, a short digitiform terminal process, notched with a relatively long spine (flagellum) with a notched fringe.

\*) This species is named after Dr. Barbara Robertson from Manaus, thanks to whom I received the material studied.



#### Female:

Stocky, ovoid, without any ornamentation between Th4 and Th5. The last thoracic segment slightly asymmetrical; the left side is terminated by two spines at about the same level laterally; they are orientated towards the furca. On the right, the wing is larger and bears two oblique, relatively obtuse spines.

Genital segment conical, long, 1.3 x longer than wide with a bifid spine on the left; on the right, another spine (normally) dorsal. Second abdominal segment relatively long, but always wider than long.

Antennules short; they do not reach beyond the thorax.

Exopodite 1 of P5 long; Endopodite at least as long as the exopodite 1; with a sort of longitudinal hull on the inner side. It is ended by two subequal spines and a row of hairs.

Length: male, about 2.00 mm; female, 2.3 mm.

*Argyrodiaptomus robertsonae* is quite easily distinguished from *A. denticulatus* by the following characters:

- in male: by the antennule (antepenultimate joint), the lateral spine of P5 right exopodite, the length of the digitiform process of left exopodite P5;

- in female: by the length of antennule, the relative length of endopodite of P5.

It is a large species whose ecology and distribution are not yet known. However, ROBERTSON (in litt.) has also found it in lake Calado near Manaus and from this find, it is already possible to say that it is widely distributed at least in the Amazon basin in the two states Pará and Amazonas in Brazil, and probably extends to Peru and Bolivia (Beni) (BRANDORFF 1976 calls it *A. denticulatus*!).

It is the ninth species of *Argyrodiaptomus* if you do not count *A. spiniger* (BRIAN 1925) which makes transition with the *Notodiaptomus* species, nor *A. ferus* and *A. cavernicolax* described by CHEN & TAI (1964) (DUSSART & DEFAYE 1983).

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Plate 1:

*Argyrodiaptomus denticulatus*:

1: Last thoracic segment and first abdominal segment of male; 2: Antepenultimate joint of antennule right male; 3: P5 male; 4: P5 female; 5: Joints 10 to 15 of antennule right male; 6: Female; 7: Last thoracic segment and genital segment of female; 8: Genital segment, lateral left view.



Plate 2:

*Argyrodiaptomus robertsonae* nov. sp.:

- 1: Posterior part of male; 2: Antepenultimate joint of antennule right male; 3: P5 male, lateral view;  
 4: P5 male; 5: P5 left, detail of end; 6: Joints 8 to 15 of antennule right male; 7: P5 female, lateral view;  
 8: Female; 9: Genital segment, lateral view; 10: P5 female.